Native Plant Walk

Grade Level: 4th through 12th, Grades
Subject: Science, Art, Language Arts
Duration: 60 minutes
Materials: Clipboard, pencil and nature search sheet

Overview: A local guide facilitates a walk through a restoration site. Students complete a nature search worksheet. The major purpose of this activity is for students to recognize all environments have characteristic life forms and to acquaint students with the distinction between native and non-native plants. (Teachers will keep the worksheet for further classroom study.)

Objectives: Students will investigate the habitats along the walk. Students will generalize each habitat having characteristic life forms. Suggest ways the environment affects these life forms occupying it. Students will identify native and non-native plants.

Next Generation Florida Sunshine State Standards:

Benchmarks K-2

SC.K.N.1.1 Collaborate with a partner to collect information.
SC.K.L.14.3 Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.
SC.1.N.1.2 Using the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others.
SC.1.L.14.1 Make observations of living things and their environment using the five senses.
SC.1.L.14.2 Identify the major parts of plants, including stem, roots, leaves, and flowers.
SC.1.L.16.1 Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population.
SC.1.L.17.1 Through observation, recognize that all plants and animals, including humans, need the basic necessities of air, water, food, and space.
SC.2.N.1.2 Compare the observations made by different groups using the same tools.
SC.2.L.17.2Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs.

Benchmarks 3-5

SC.3.L.15.1 Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.
SC.4.N.1.6 Keep records that describe observations made, carefully distinguishing actual observations from ideas and inferences about the observations.

SC.4.L.17.2 Explain that animals, including humans, cannot make their own food and that when animals eat plants or other animals, the energy stored in the food source is passed to them.
SC.4.L.17.3 Trace the flow of energy from the Sun as it is transferred along the food chain through the producers to the consumers.
SC.4.L.17.4 Recognize ways plants and animals, including humans, can impact the environment.
SC.5.L.17.1 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

Background:

Wild birds and other animals are valued and appreciated residents of the Manatee County conservation lands. Unlike the soil, waterways, or other ecological components of the environment, wild animals do not create, but rather reflect environmental quality. They are an indicator of a diverse and healthy ecological community, and the positive values they impart to local ecosystems must be emphasized through public awareness and education of both old and young concerning the potential richness and quality of their environment.

Every environment has its characteristic organisms - plant and animal. Many organisms have adjusted as their habitat has changed from undeveloped to urban. Not only have people altered the environment; the human environment has been shaped by the ecologies within which people live.

Fossil remains indicate even in prehistoric time plant and animal populations migrated to different geographic regions. This migration was in response to climatic and other changing conditions (for instance wind blows seed to Florida from the Caribbean). These migrations took place over long periods of time. In some cases, original inhabitants of an area would become extinct or die out within the changed region.

Natural land and water barriers prevented many species from spreading to certain areas. But people, with their sophisticated transport systems, have changed the plant and wildlife populations of islands and continents. Many plants and animals we take for granted as native to Manatee County actually were not on this continent when

the first European settlers came. While some of the original species were destroyed, went extinct or relocated.

Botanists determine whether a plant is native if it was "pre-Columbian" (before the entrance of Christopher Columbus into the "New World" and the resulting European explorations). A non-native or exotic plant came here from someplace else. Some plants migrated here naturally as explained above, while others were brought here by humans. There are two main reasons why people bring plants into an area: 1) for food (or medicinal remedies): agricultural use, and 2) for landscape and ornamental use. Agriculture and ornamental horticulture are important industries to Florida's economy.

Suggested Procedure:

1. Discuss the diversity of wildlife. Make sure students understand wildlife includes insects, spiders and other invertebrates as well as birds, fish reptiles, mammals and amphibians.
2. Explain native and non-native plants. Tell students you will be pointing out various plants on the walk. They should make note of these on their worksheet. (Use Inquiry-based Questions below).
3. Stop and remove exotic invasive plants and be sure all students participate and understand the detrimental effects of invasive plants on habitat elements.
4. Ask students to point out wildlife that they see along the way. Explain in order to view wildlife the class must be as quiet as possible.
5. Complete the nature search worksheet by making observations and recording what you see including plant life and animal life. Give teacher student forms.
6. Option: Stop at some point along the walk giving the students a few minutes to illustrate their observations. Explain that scientists can't always identify an organism in the field. They then will draw a detailed picture to bring back to their laboratory or office to identify using research books or the Internet. Drawing is an important part of scientific study.

Inquiry-based Questions:

What does it mean to be native? (You are from this place)

How many of you were born in Manatee County? In Florida? You are native.

What is a native plant? (A plant that has always been here)

What is an exotic plant? (A plant that comes from someplace else)
What is an invasive plant? (Takes over natural areas)
What is a botanist? (A scientist who studies plants)
Botanists determine whether a plant is native if it was here pre-Columbian.

What is pre-Columbian? (Let's take the word apart. What does pre mean? Pre means before. What would pre-Columbian mean? Before Christopher Columbus and the wave of European explorers who followed him. They brought all kinds of things with them including exotic plants and animals. The pig is not native to North America.)

Let's look at some of the plants where we are now. For instance what is that tree above us? (Help students to come up with a correct answer. Some may know oak, but not "live oak" [or "sand live oak" at Rye]. Explain there are about 30 different species of oak in Florida. Live oak is just one of them.)

Is a live oak native or exotic? Write live oak under native on your nature search form.

At Emerson Point be sure to point out the mango trees. Ask what they are. There is usually a student or two familiar with the mango tree. Is a mango tree native or exotic? (Exotic)

Where does the mango tree come from? (India)

Why were mango trees brought to Florida? (Food)

Are orange trees native or exotic? (Exotic)

Who brought orange trees here? (Most credit Christopher Columbus with bringing the orange tree to the new world, eventually making its way to Florida.)

Where do orange trees come from? (China. They were exotic in Spain when they were brought to the new world!)

Are all exotic plants invasive? (No)

Why are we controlling invasive exotic plants? (To restore habitat to native animals…)

Continue the walk in this inquiry-based and observational manner.